SPECIAL DATA COLLECTION SYSTEM (SDCS) EVENT REPORT, NEAR EAST COAST OF EASTERN RUSSIA, 16 MAY 1975

K. J. Hill, et al

Teledyne Geotech

Prepared for:

Air Force Technical Applications Center

21 January 1976

SDCS-ER-75-44

SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
Near East Coast of Eastern Russia, 16 May 1975

K.J. Hill, M.S. Dawkins, R.R. Baumstark, and M.D. Gillespie
Alexandria Laboratories
Teledyne Geotech, 314 Montgomery Street, Alexandria, Virginia 22314

January 1976

Sponsored By
The Defense Advanced Research Projects Agency
Nuclear Monitoring Research Office
1400 Wilson Boulevard, Arlington, Virginia 22209
ARPA Order No. 2897

Monitored By
VELA Seismological Center
312 Montgomery Street, Alexandria, Virginia 22314

Disclaimer: Neither the Defense Advanced Research Projects Agency nor the Air Force Technical Applications Center will be responsible for information contained herein which has been supplied by other organizations or contractors, and this document is subject to later revision as may be necessary. The views and conclusions presented are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Defense Advanced Research Projects Agency, the Air Force Technical Applications Center, or the US Government.

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1 REPORT NUMBER: SDCS-ER-75-44	2 GOVT ACCESSION NO.
3 RECIPIENT'S CATALOG NUMBER	
4 TITLE (and Subtitle): SPECIAL DATA COLLECTION SYSTEM (SDCS) Near East Coast of Eastern Russia, 16 May 1975	5 TYPE OF REPORT & PERIOD COVERED: Technical
	6 PERFORMING ORG. REPORT NUMBER
7 AUTHOR(s): Hill, K. J., Dawkins, M. S., Baumstark, R. R., and Gillespie, M. D.	8 CONTRACT OR GRANT NUMBER(s): F08606-74-C-0013
9 PERFORMING ORGANIZATION NAME AND ADDRESS: Teledyne Geotech, 314 Montgomery Street, Alexandria, Virginia 22314	10 PROGRAM ELEMENT PROJECT TASK AREA & WORK UNIT NUMBERS: T/4703
11 CONTROLLING OFFICE NAME AND ADDRESS: Defense Advanced Research Projects Agency, Nuclear Monitoring Research Office, 1400 Wilson Blvd.-Arlington, Virginia	12 REPORT DATE: 21 January 1976 13 NUMBER OF PAGES: 350
14 MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office): VELA Seismological Center, 312 Montgomery Street, Alexandria, Virginia 22314	15 SECURITY CLASS (of this report): Unclassified 15a DECLASSIFICATION DOWNGRADING SCHEDULE

16 DISTRIBUTION STATEMENT (of this Report)

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED.

17 DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18 SUPPLEMENTARY NOTES

19 KEY WORDS (Continue on reverse side if necessary and identify by block number)

20 ABSTRACT (Continue on reverse side if necessary and identify by block number)

SDCS EVENT REPORT NO. 44

Near East Coast of Eastern Russia, 16 May 1975

This event report contains seismic data from the Special Data Collection System (SDCS), and other sources for the above event. Published epicenter information from seismic observations is:

	"P" Arrival	Origin Time	Lat.	Long.	m_b	M_s
NORSAR	01:25:12.2	01:14:08	41 N	137 E	5.3	N/A
LASA	01:25:58.1	01:14:14	41.7N	135.9E	5.8	N/A
Hagfors	01:25:09.9	01:14:14	40 N	131 E	5.8	5.1

Using SDCS stations, LASA and NORSAR, the epicenter location and magnitudes become

01:14:03.5	40.6N	135.7E	5.6	4.3

All SDCS stations were operational during this period.

Short-period signals associated with this event were recorded at WH2YK, RK-ON, HN-ME, CPSO, LASA and NORSAR. FN-WV did not record a short-period "P" arrival for this event and was not included in this report. Horizontal SP channels at WH2YK, RK-ON, HN-ME and CPSO were rotated.

Long-period signals were recorded at WH2YK, HN-ME, FN-WV, CPSO, ALPA, LASA and NORSAR. Horizontal LP channels at CPSO, WH2YK and RK-ON were rotated. Horizontal LP channels at HN-ME were not rotated because of unknown gain of the LP radial channel. Horizontal LP channels at FN-WV were not rotated because of unknown instrument orientation.* The operating gain of the LP vertical channel at RK-ON was unknown because the instrument was not responding properly. Validity of the ALPA, LASA and NORSAR long-period vertical beams is questionable and horizontal beams were not included because of program recovery problems.

Scaling factors on plots are millimicrons at 1 Hz (not corrected for instrument response) with the exception of LASA and NORSAR short-period plots. LASA SP scaling factors are millimicrons per inch. Scaling factors are not reported for NORSAR short-period.

* Due to operational problems the instrument hole lock was repositioned and the known orientation lost. Situation corrected 24 May 75 when the instrument was moved to a new borehole.

STATION DESCRIPTION

SITE CODE	LOCATION	SITE COORDINATES DEG MN SECS	ELEVATION METERS	INSTRUMENTATION SHORT-PERIOD	LONG-PERIOD
ALPA	Alaska	65 14 00.0 N 147 44 36.0 W	626	None	31300
CPSO	McMinnville, Tennessee	35 35 41.4 N 085 34 13.5 W	574	6480 V 7515 H	SL210 V SL220 H
FN-WV	Franklin, West Virginia	38 32 58.0 N 079 30 47.0 W	910	KS36000	KS36000
LASA	Billings, Montana	46 41 19.0 N 106 13 20.0 W	744	HS10	7505A V 8700C H
HN-ME	Houlton, Maine	46 09 45.0 N 067 59 09.0 W	213	18300	SL210 V SL220 H
NORSAR	Kjeller, Norway	60 49 25.4 N 010 49 56.5 E	379	HS10	7505A V 8700C H
RK-ON	Red Lake, Ontario	50 50 20.0 N 093 40 20.0 W	366	18300	SL210 V SL220 H
WH2YK	White Horse, Yukon	60 41 41.0 N 134 58 02.0 W	855	18300	SL210 V SL220 H

HYPOCENTER DETERMINATION

INPUT FOR EVENT 16 MAY 75
01:14:14.0 41.700N 135.900E 0KM.

STA.	ARRIVAL	RESIDUALS CALC	RESIDUALS REST	DIST. REST	AZ. REST
WH2YR	01 23 38.3	0.2	0.2	55.4	36.7
NAC	01 25 12.2	-0.1	-0.0	69.4	334.6
IAC	01 25 58.1	0.0	0.1	77.1	38.5
RK-CN	01 26 08.9	-0.7	-0.8	79.3	29.3
HN-PE	01 27 09.5	0.6	0.5	91.1	16.2
CPC	01 27 26.5	-0.0	0.0	95.2	32.7

67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
01:14:15.3	40.945N	135.754E	76. CALC	0.4	7	6
01:14:03.5	40.557N	135.696E	0. REST	0.4	3	6

CALC

```
    1 . 2
  0   .   3
0    0. 0    0
. . . . . . .
0    0. 0    0
  0   .   0
    0 . 0
```

REST

```
    1 . 2
  0   .   3
0    0. 0    0
. . . . . . .
0    0. 0    0
  0   .   0
    0 . 0
```

CHI2 COVERAGE ELLIPSE: 95 PER CENT CONF..LEVEL, SDV= 0.90
MAJOR 153.9KM. MINOR 44.2KM. AZ= 5 AREA= 21373 SQ.KM. REST

DATA SUMMARY

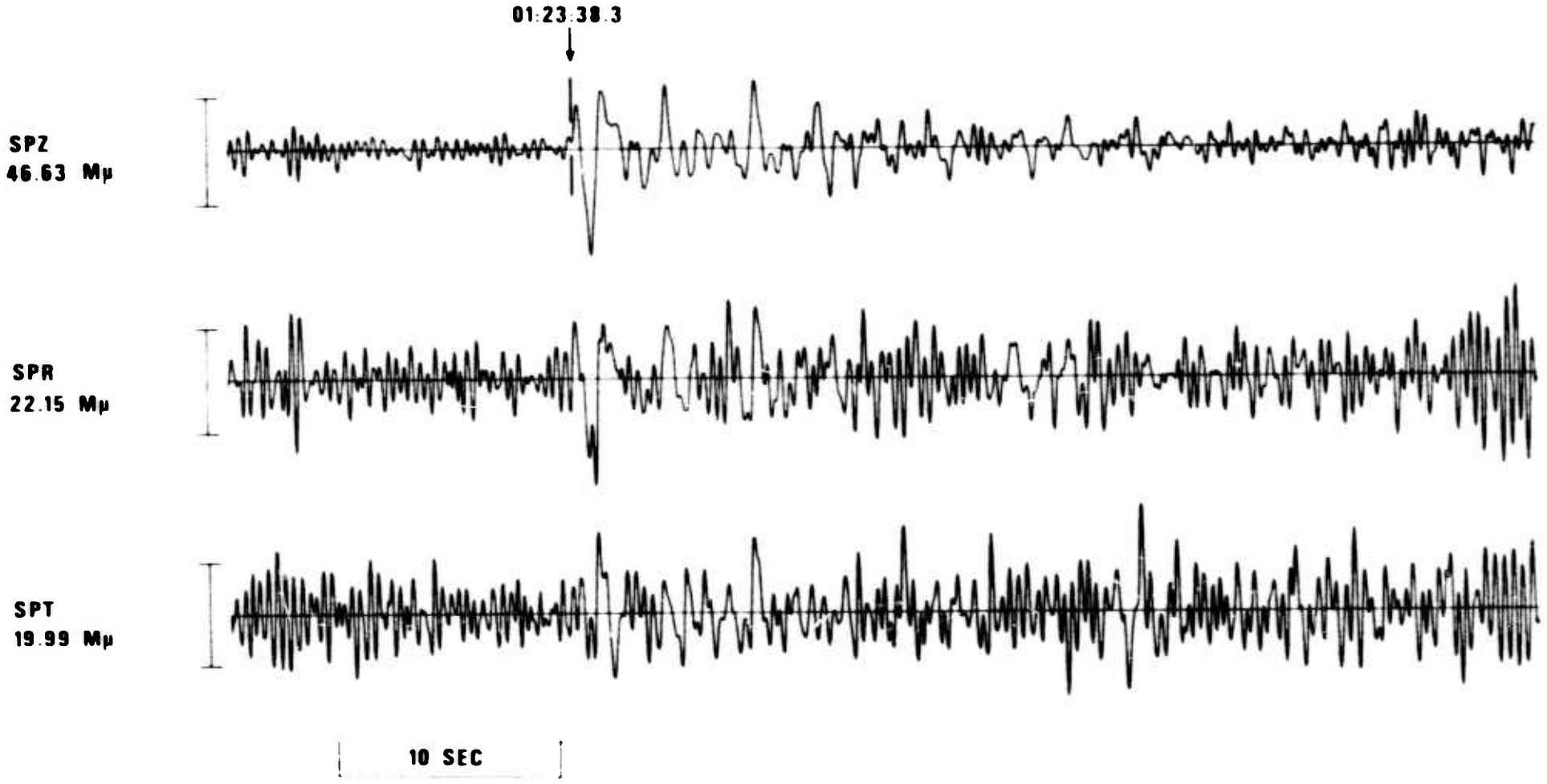
INPUT FOR EVENT 16 MAY 75
01:14:14.0 41.700N 135.900E 0KM.

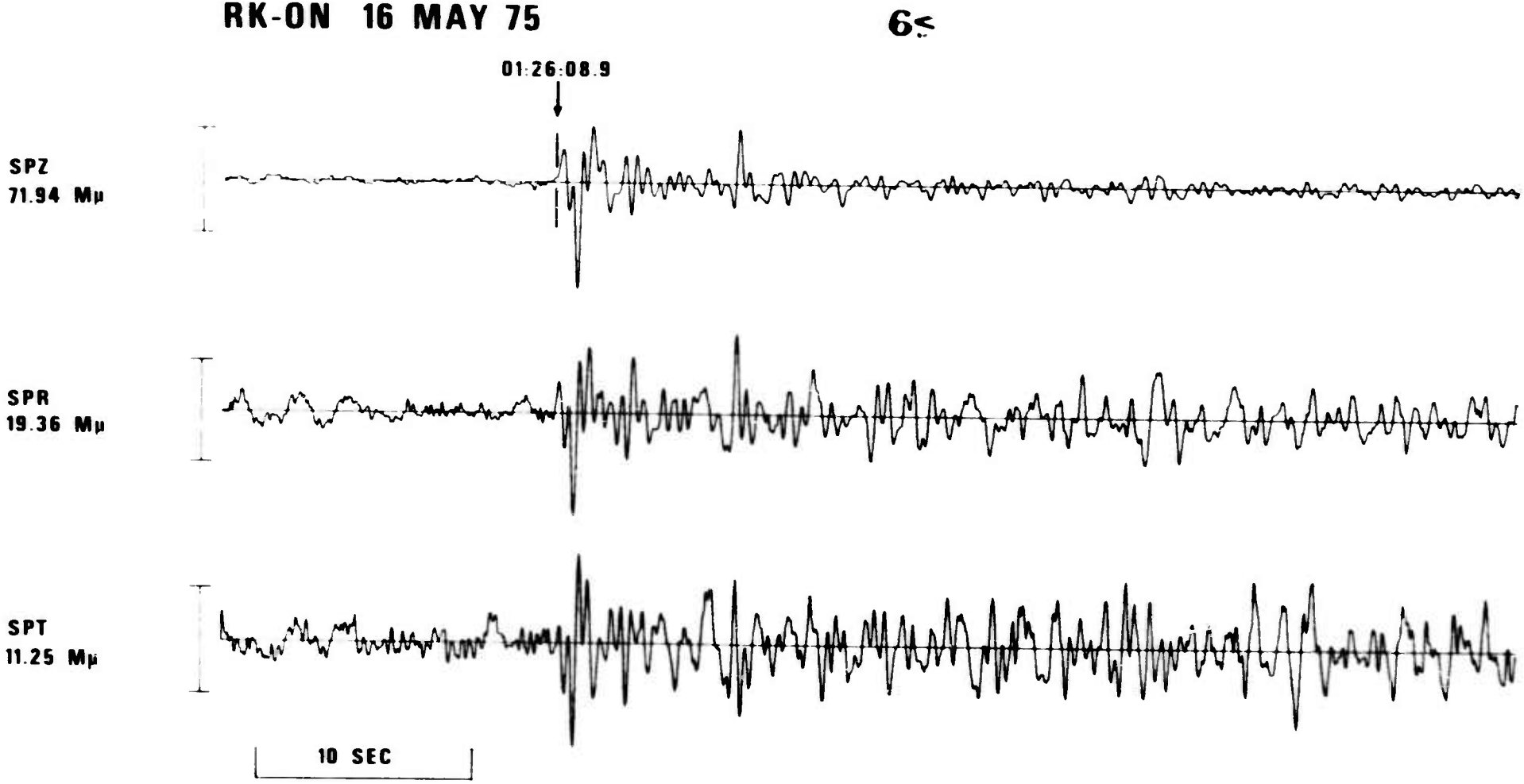
STA.	PHASE	ARRIVAL TIME	INST	PER	AZT	MAGNITUDE MB	MS	DIR	DIST
AIEA	IP	01 41 31.0	IPZ	22.0	11.		3.85		48.5
WH2YK	EP	01 23 38.3	SPZ	1.2	99.	5.50			55.4
WH2YK	LR	01 50 53.0	IPZ	20.0	12.		3.94		55.4
NAC	EP	01 25 12.2	AB	1.0	86.	5.59			69.4
NAC	LR	01 57 49.0	IPZ	20.0	34.		4.49		69.4
IAC	EP	01 25 58.1	AB	1.2	120.	5.68			77.1
IAC	LR	02 04 03.0	IPZ	18.0	14.		4.15		77.1
FK-CN	EP	01 26 08.9	SPZ	0.5	52.	5.19			79.3
FN-ME	EP	01 27 09.5	SPZ	1.3	67.	5.63			91.1
FN-ME	LR	02 15 11.0	IPZ	23.0	55.		4.82		91.1
FN-WV	LR	02 09 58.0	IPZ	23.0	16.		4.30		94.9
CPC	EP	01 27 28.5	SPZ	1.4	90.	5.88			95.2
CPC	LR	02 16 59.0	IPZ	21.0	17.		4.33		95.2

ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	LPMAG	LPSDV	LPSTA
01:14:15.3	40.945N	135.754E	76. CALC	5.45	0.26	6	4.27	0.3	7
01:14:03.5	40.957N	135.696E	0. REST	5.58	0.23	6	4.27	0.3	7

WH2YK 16 MAY 75

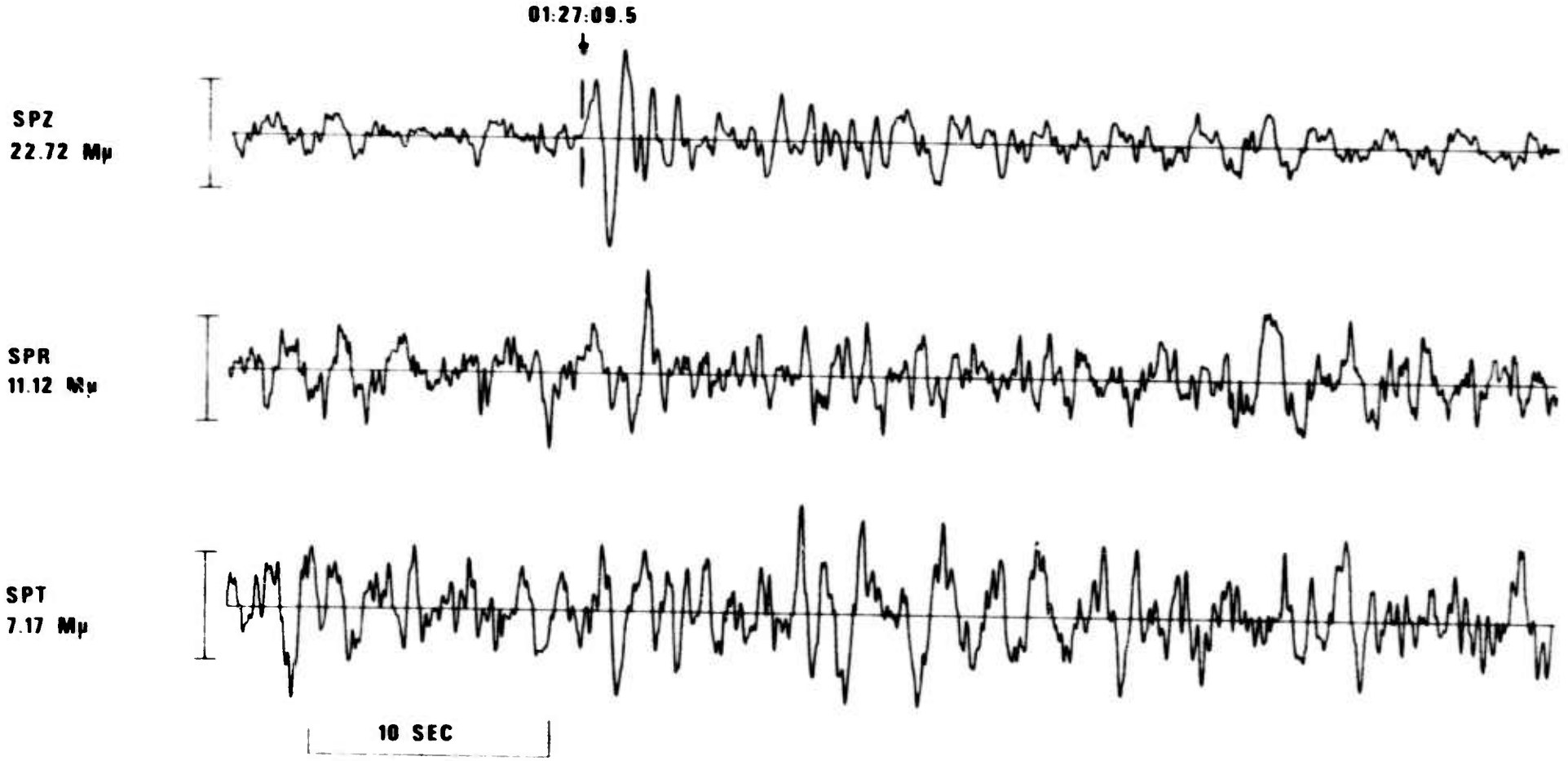
5<



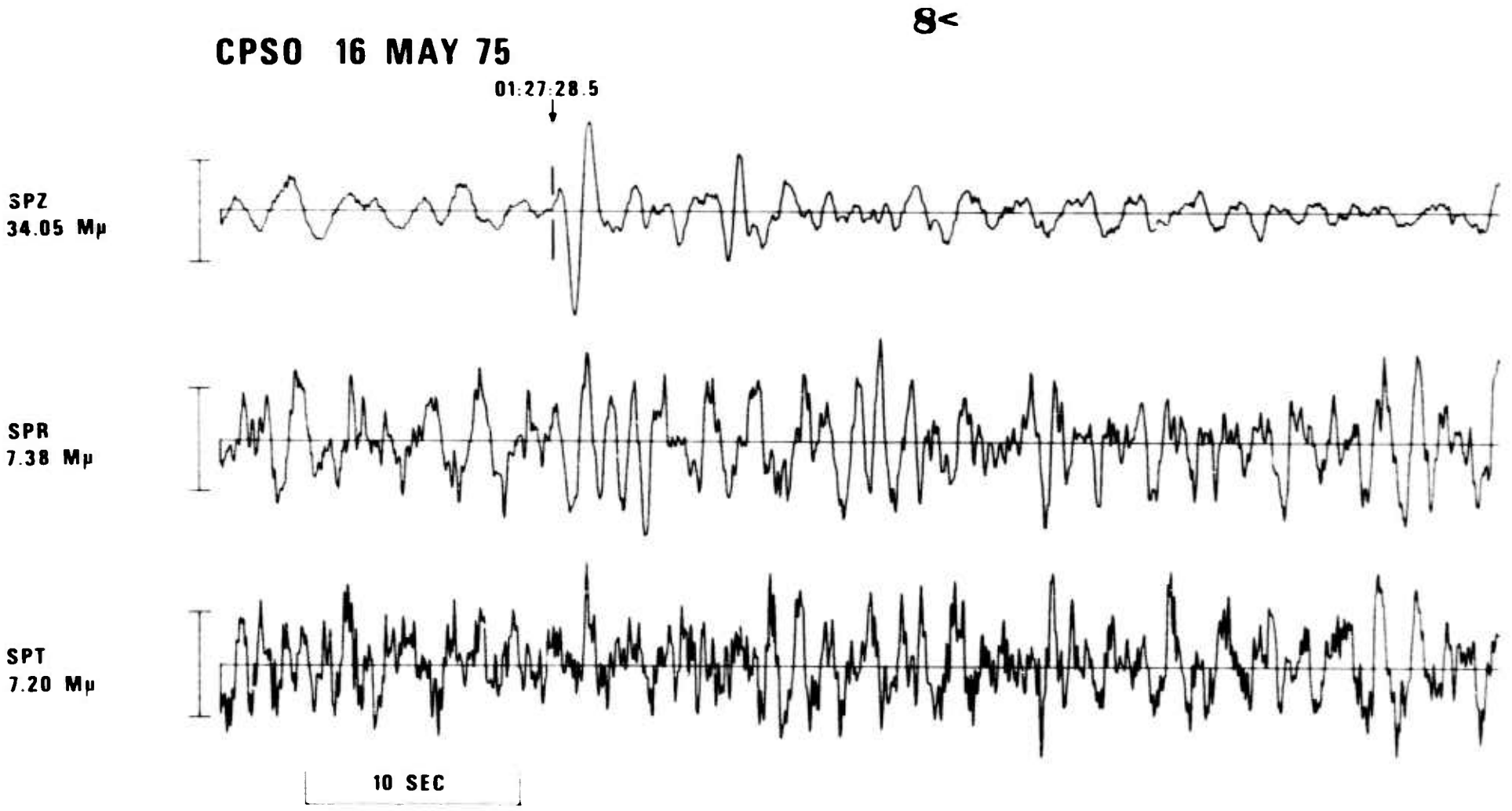

RK-ON 16 MAY 75
6≤
01:26:08.9
SPZ
71.94 Mμ
SPR
19.36 Mμ
SPT
11.25 Mμ
10 SEC

HN-ME 16 MAY 75

7<

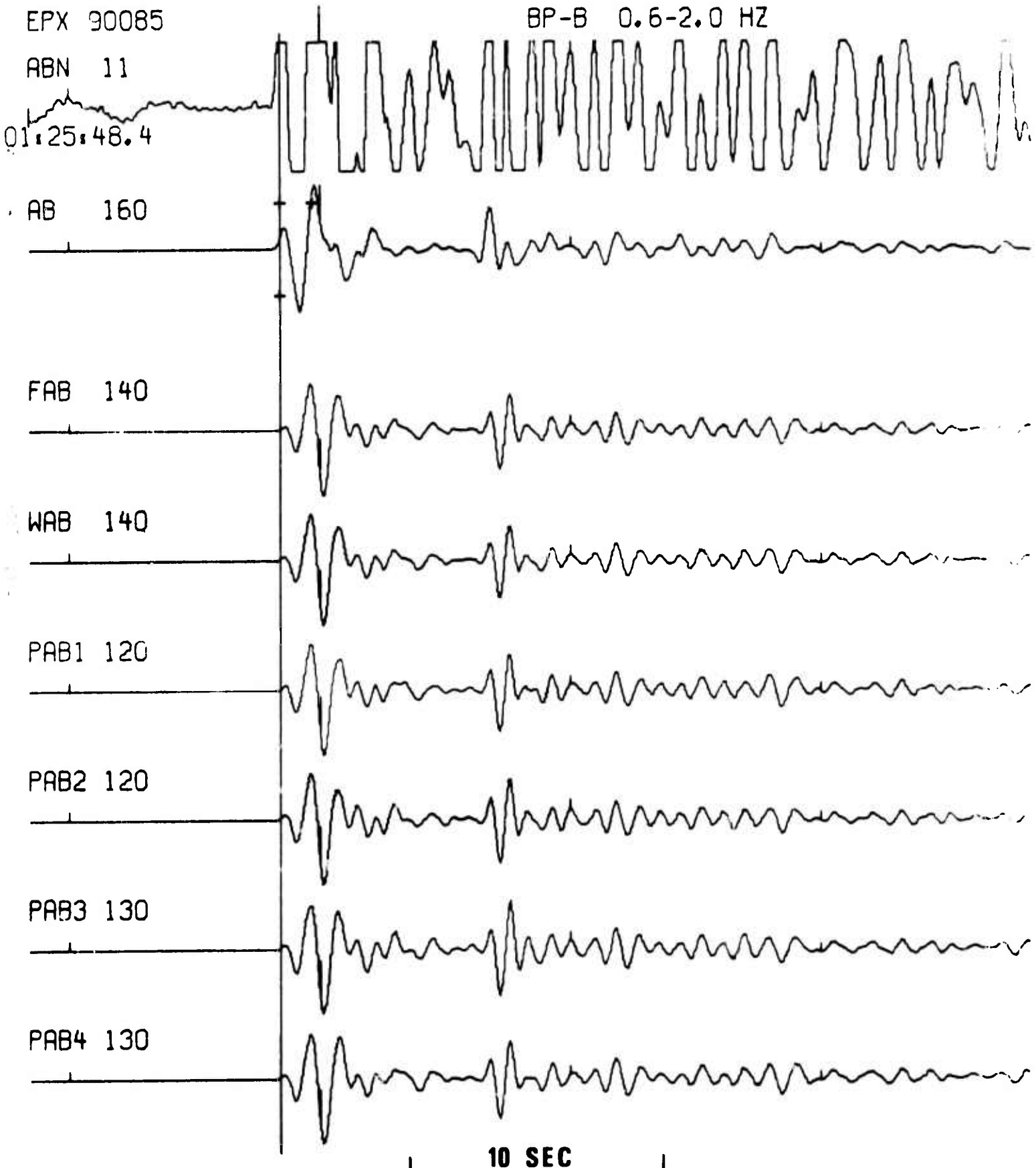


8<



LASA

1 16 MAY 1975
2 1 14 14 41.7N 135.9E 330 C 5.6 660 SEA OF JAPAN
3 1 25 58.4 LAO P 95.8 1.3 19.5 76.2 317.0

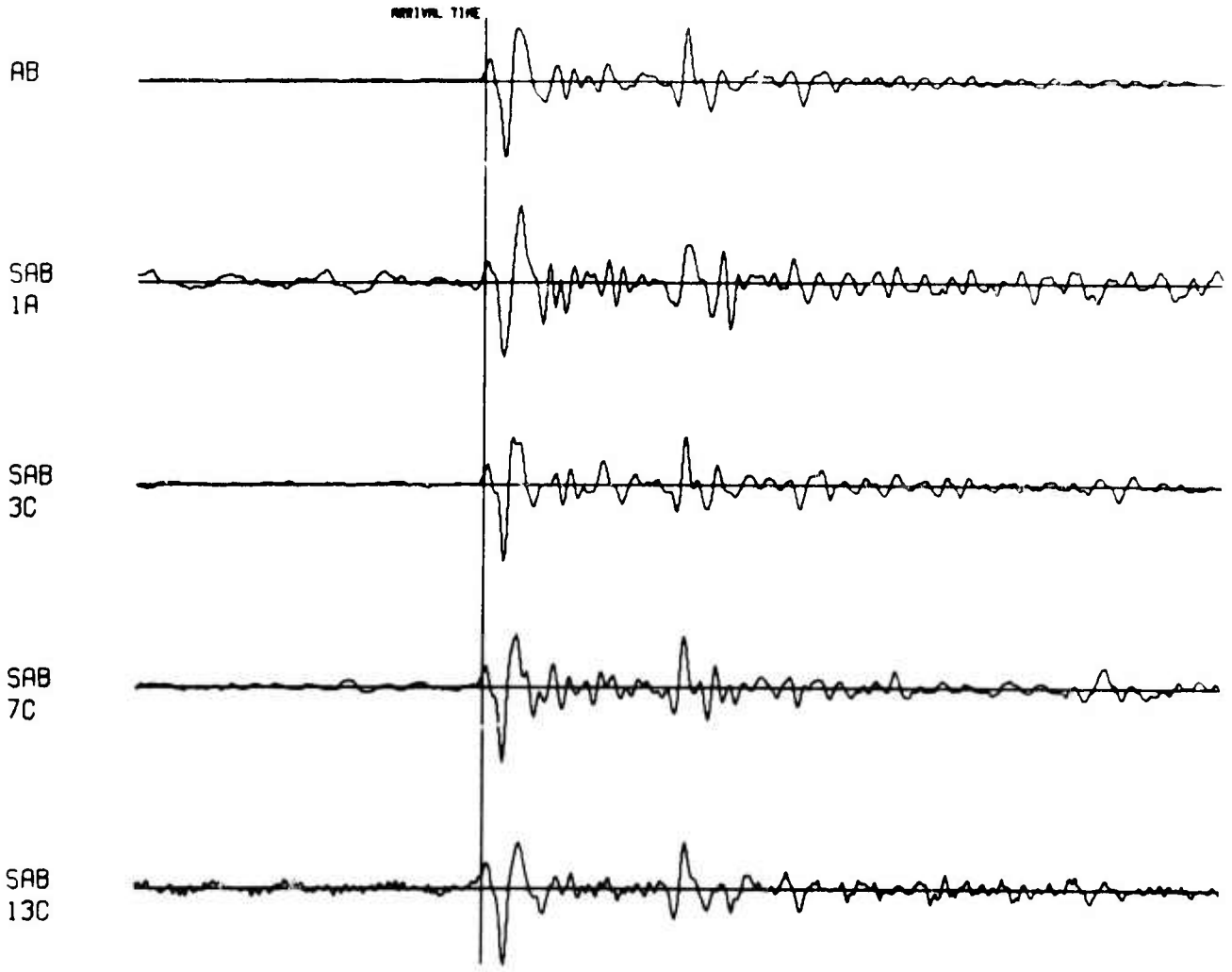


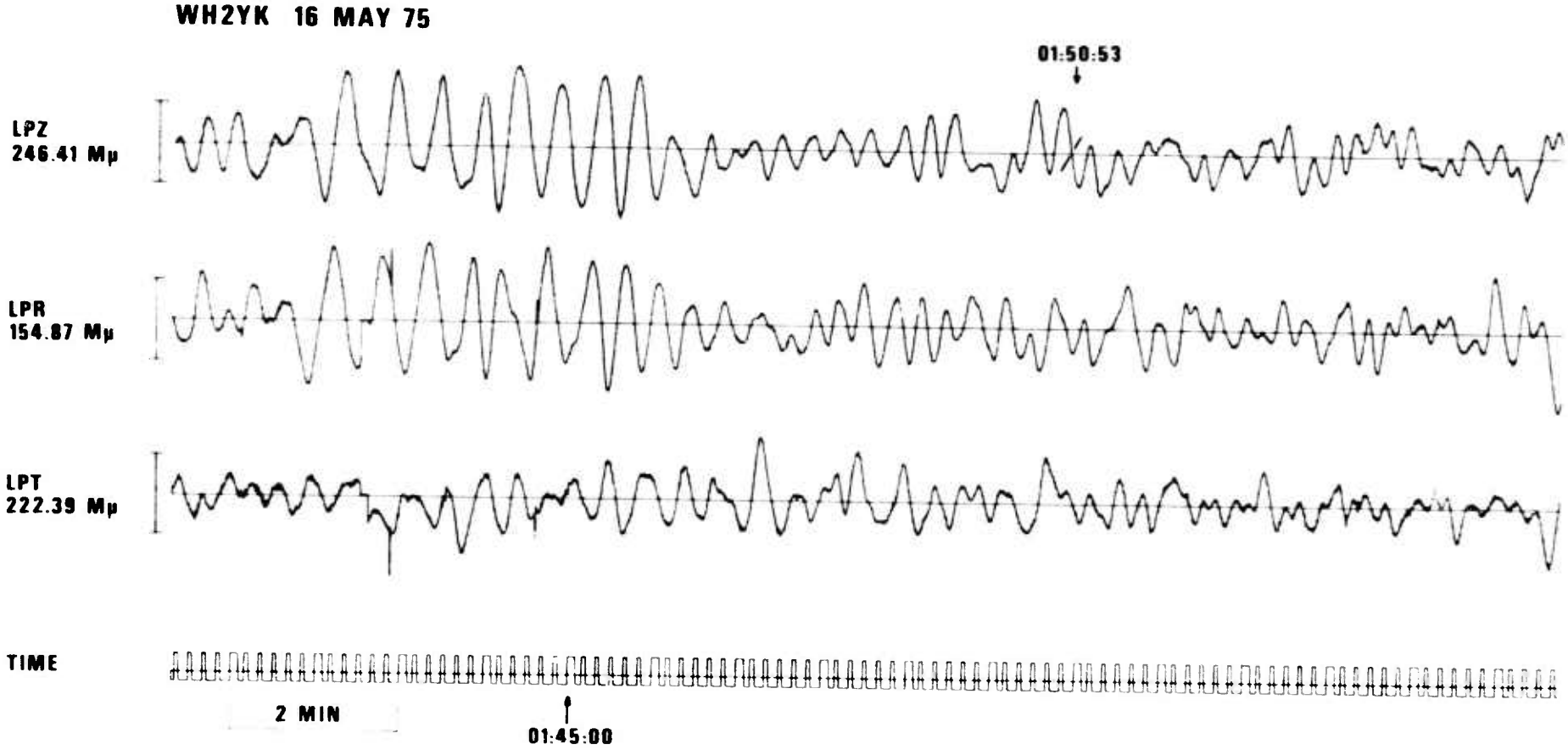
NORSAR EVENT FILE **16 MAY 75**

EPX NO. 46130 ARR. 1.25.12.6 40.9N 136.8E 5.2MB 33KM

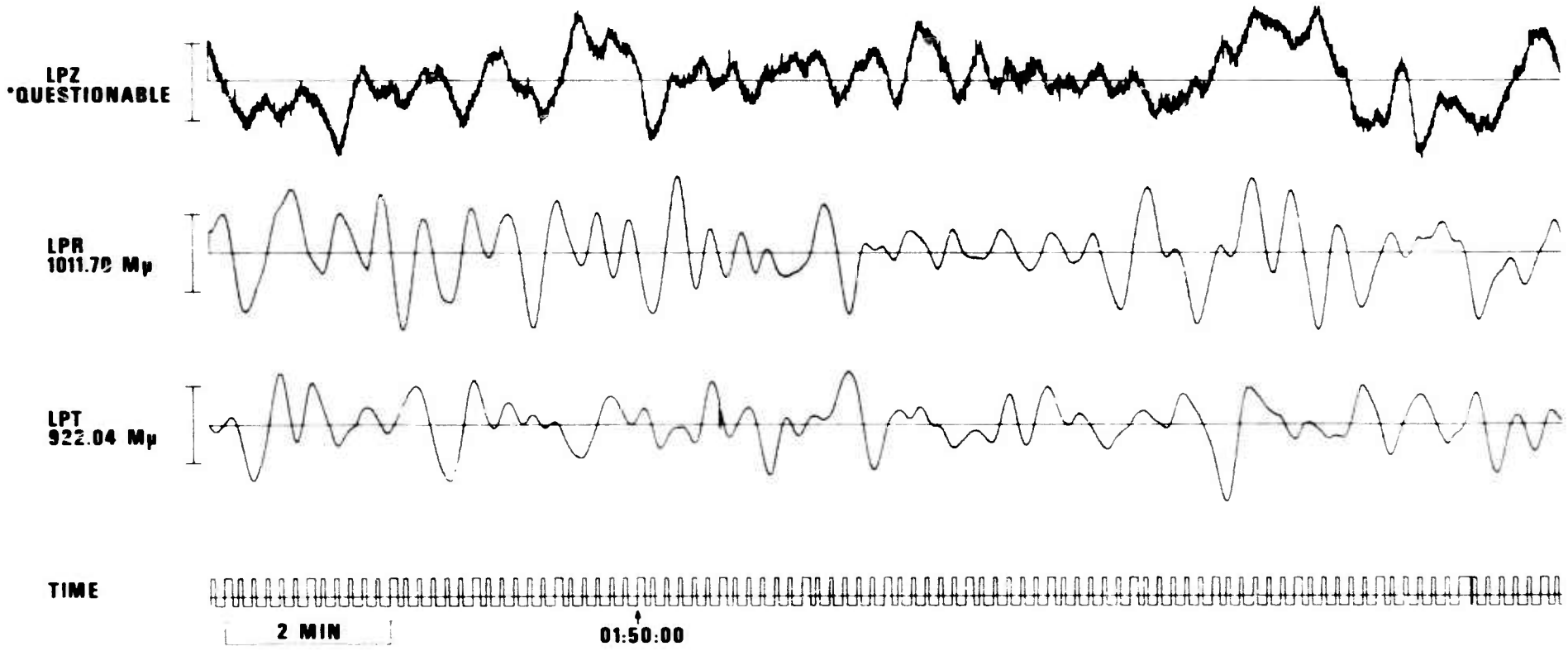
DIST = 69.5 AZI = 40.9 AMP = 43.2 PER = 1.3 UMETH 2

SCALE[_____]= 5 SECONDS

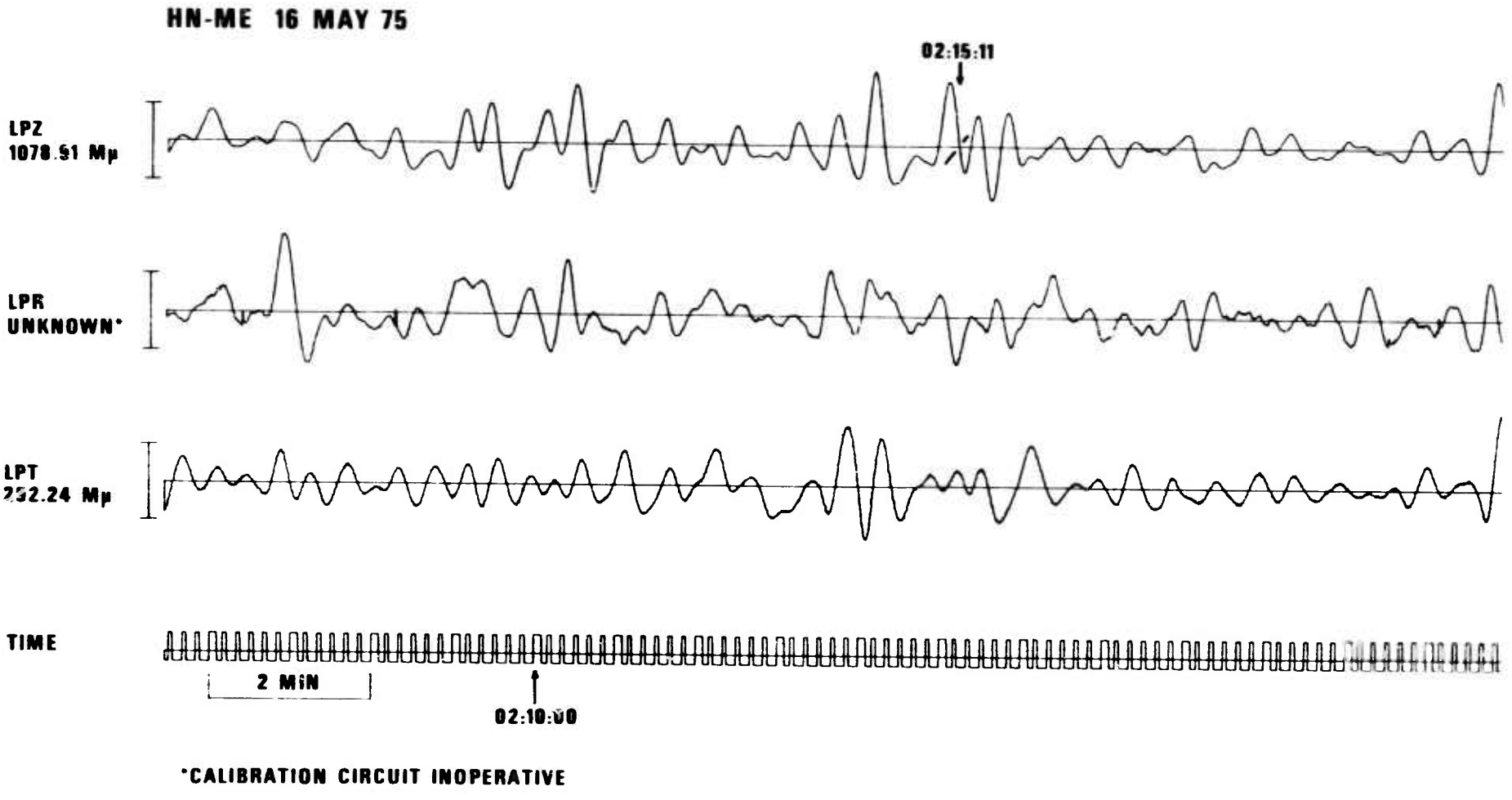



WH2YK 16 MAY 75
01:50:53
LPZ
246.41 Mμ
LPR
154.87 Mμ
LPT
222.39 Mμ
TIME
2 MIN
01:45:00

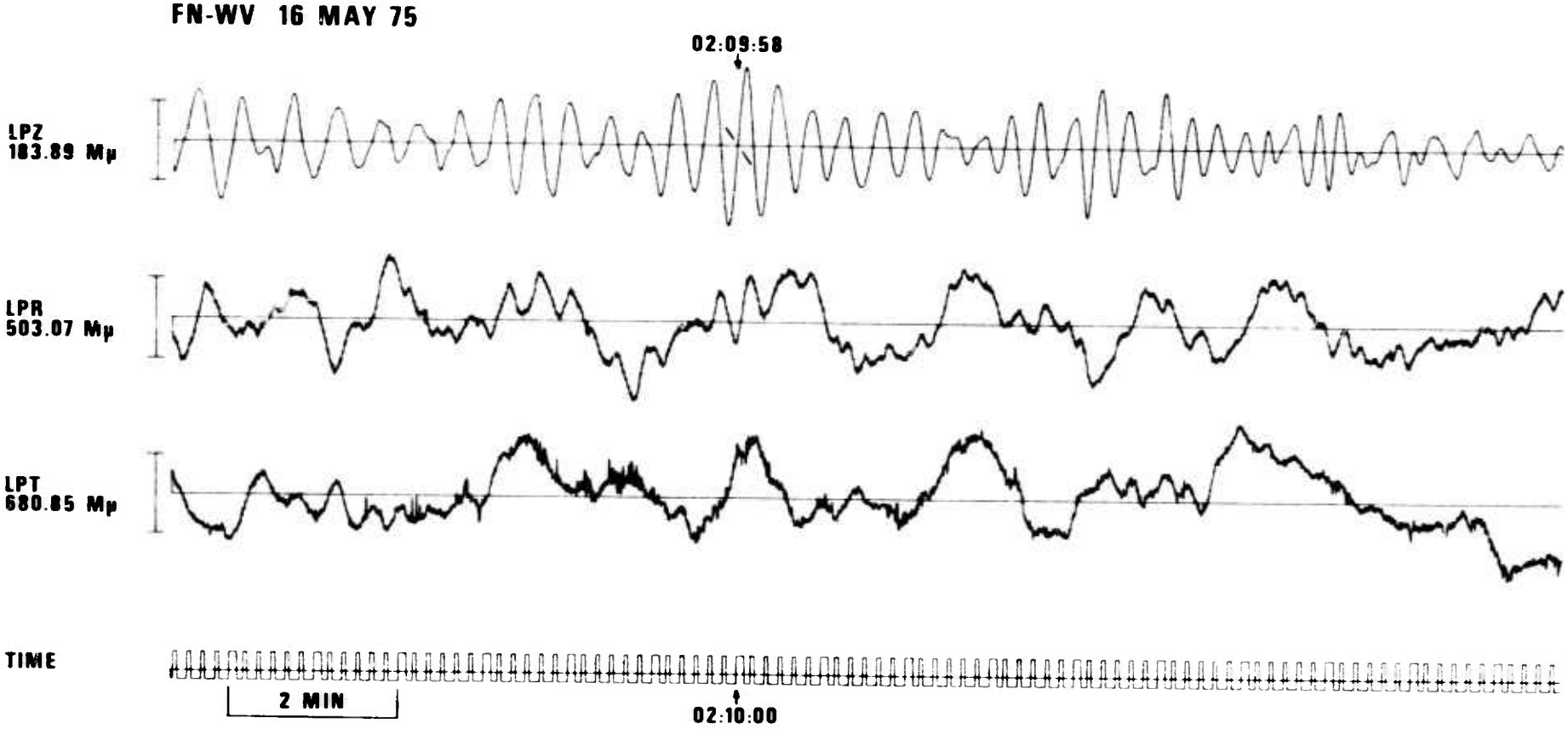
RK-ON 16 MAY 75

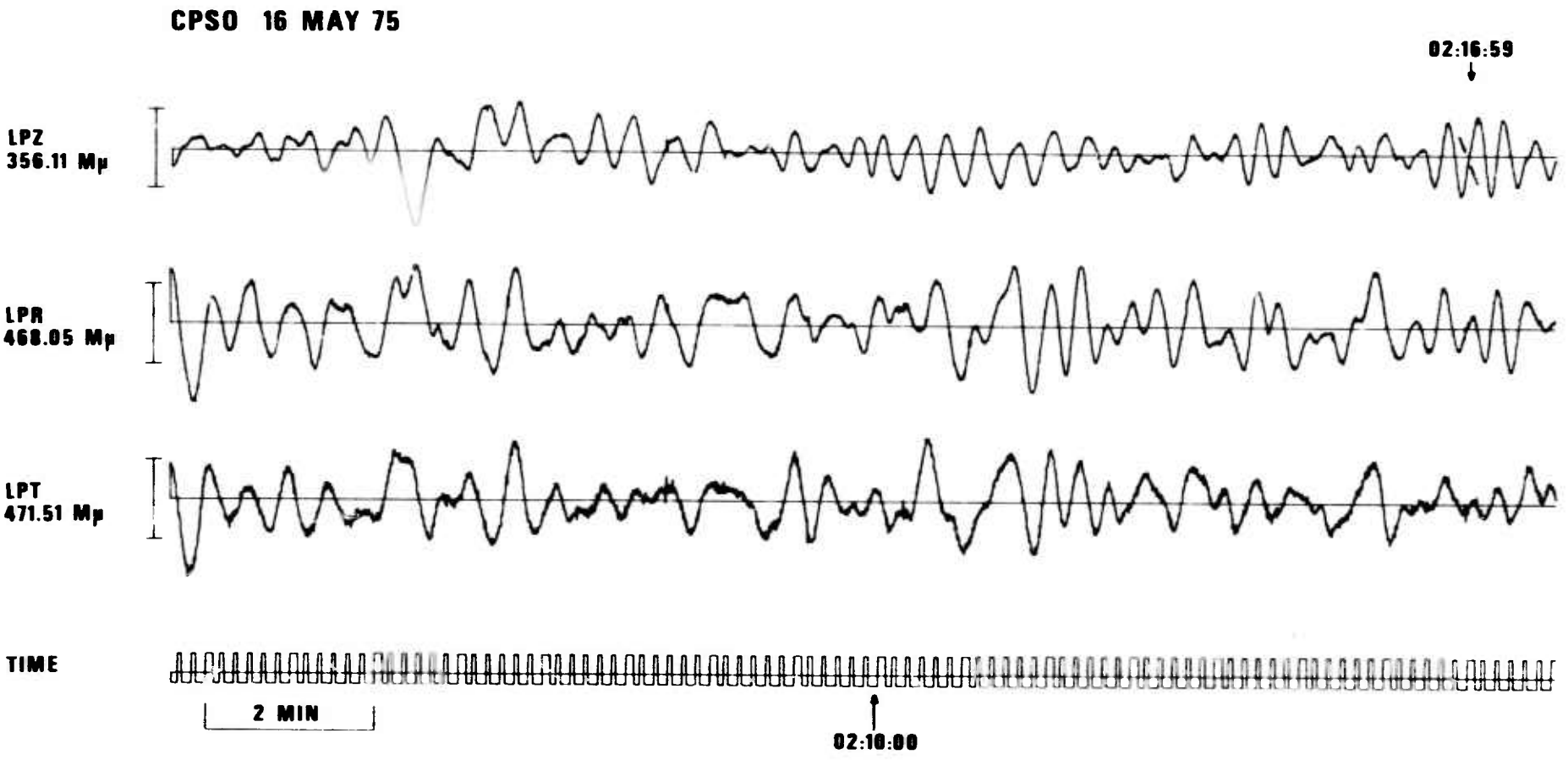


*INSTRUMENT NOT RESPONDING PROPERLY



*CALIBRATION CIRCUIT INOPERATIVE


FN-WV 16 MAY 75
02:09:58
LPZ
183.89 Mμ
LPR
503.07 Mμ
LPT
680.85 Mμ
TIME
2 MIN
02:10:00


CPSO 16 MAY 75
02:16:59
LPZ
356.11 Mμ
LPR
468.05 Mμ
LPT
471.51 Mμ
TIME
2 MIN
02:16:00

ARRAY LONG PERIOD VERTICAL BEAMS 16 MAY 75